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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 04162004

Application Number: 09/711,126
Filing Date: 11/13/2000
Appellant(s): HILL ET AL

Luke A. Kilyk
For Appellant

EXAMINER'S ANSWER

(1) ***Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

(2) ***Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) ***Status of claims.***

The statement of the status of claims contained in the brief is correct.

(4) ***Status of Amendments After Final.***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) ***Summary of invention.***

The summary of invention contained in the brief is correct.

(6) ***Issues.***

The appellant's statement of the issues in the brief is correct, except the 35 USC 112 rejections have been dropped as Applicant states that that the term "uncausticized green liquor" as used in the claims, has been defined as green liquor or a derivative thereof, see page 9, lines 5-8 of the specification. Accordingly, the term "uncausticized green liquor" in the claims is equivalent to green liquor or a derivative of green liquor, and is no longer considered indefinite.

(7) ***Grouping of claims.***

The rejection of claims 1, 3, 4-6, 8-11, 17, 19-22 and 24 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

The rejection of claims 2, 7, 12 and 23 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

The rejection of claims 31-39 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

The rejection of claims 41and 42 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) ***Claims appealed.***

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) ***Prior Art of record.***

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

REFERENCES

U.S Patents

5,169,497	SARKAR et al	05-1992
5,507,914	SARKAR et al	04-1996

Foreign Patents

99/43780	WO	02-1999
0 433 258	EP	06-1991

(10) ***New prior art.***

No new prior art has been applied in this examiner's answer.

(11) ***Grounds of rejection.***

The following grounds of rejection are applicable to the appealed claims.

Claims 1, 3, 4, 6, 8-11, 13, 17-22, 24, 31-36, 38, 39, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over SARKAR et al '497 with or without SARKAR et al '914.

SARKAR et al '497 teaches treating all types paper pulp (col. 3, lines 3-5) with cellulolytic enzymes and cationic polymer. In Table 1, SARKAR et al '497 uses enzyme treatment times of 10 to 60 minutes. This reads on the disclosed "about the same time" which

includes adding the two components within 10 minutes of each other, see, instant specification, page 4, lines 5-6. It is also noted that SARKAR et al '497 indicates that the enzyme should react for the pulp for 10 minutes. It does not indicate that the cationic polymer should not be added during the enzyme reaction. It would have been especially obvious to add the enzyme and polymer at times shorter than the 10 minutes of SARKAR et al '497 as SARKAR et al '914 teaches that booth the polymer and enzyme could be added at multiple addition points throughout the papermaking process (column 3, lines 60-67) and teaches that the enzyme can be added at any chest prior to the refiner and in the machine chest (col. 3, lines 53-56 and col. 5, lines 10-12). This is the same point where the cationic polymer is added (see SARKAR et al '914, claim 1, step (d). TABLE 1 of SARKAR et al shows the time to be a rate effective variable for the process of improving the pulp. The discovery of an optimum value of a result effective variable in a known process is ordinary within the skill of one of ordinary skill in the art. See, e.g. In re BOESCH, 205 USPQ2d 215,219 (CCPA 1980). The adjusting the time between additions to optimize the drainage, one of ordinary skill in the art would necessarily and inevitably have optimized the time depending on the desired properties. It would have been obvious to use any well-known pulp including sulfite pulp. See SARKAR '914 for adding prior to the machine chest, prior to the refiners and at the vertical tank. See SARKAR '914, claims 3 and 5 for a list of equivalent cationic polymers that can be used in the process. It would have been obvious to add different, but equivalent, cationic polymers in each of the multiple feed points taught by SARKAR et al. Table 1 of SARKAR et al' 497 shows CSF Values of 558.84 for 35 minutes (Table 1, Run 30) and 439.75 for 60 minutes (Table 1, Run 3) and 645.96 for 10 minutes (Table 1, Run 26). Thus the CSF values appear to increase for shorter times between

addition of the cationic polymer and the enzyme, depending on the other conditions. It would have been obvious from the data of Table 1, to decrease the time between additions for further improvements to the CSF. Applicant has not compared the instant 5 minutes to the 10 minutes disclosed by SARKAR et al '497.

Claims 2, 7, 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over SARKAR et al '497 with or without SARKAR et al '914 as applied to claim 1 above, and further in view of EP 433 258.

EP 433 258 teaches adding cationic starch to paper pulp during enzymatic treatment increases the strength of the paper. It would have been obvious to add the cationic starch to the pulp of SARKAR et al '497 to increase the paper strength as taught by EP 433 258. It would have been obvious to add the starch at various addition points in the same manner as the cationic starch and enzyme of SARKAR '914.

Claims 5 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over SARKAR et al '497 with or without SARKAR et al '914 as applied to claim 1 above, and further in view of WO 99/43780.

WO 99/43780 teaches stabilizing enzymes during pulp treatment by using the enzyme in combination with a polyamide oligomer. It would have been obvious to add the polyamide oligomer of WO 99/43780 to stabilize the enzyme of SARKAR '497.

(12) ***New ground of rejection.***

This Examiner's Answer does not contain any new ground of rejection.

(13) ***Response to argument.***

The arguments that the art does not teach simultaneous addition of the enzyme and the cationic polymer is not convincing as the instant specification defines the term "about the same time" as adding these two components within 10 minutes of each other, page 4, lines 5-6 or the claimed "within 5 minutes". This does not patentably define over the addition of SARKAR '497 In evaluating the reference, it is proper to take into account not only the specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. See In re Prada, 401 F.2d 825,826, 159 USPQ 342, 344 (CCPA 1968). Base upon the teachings of SARKAR '497, one of skill in the art would not expect any difference in results based on the order of addition of these two ingredients, all of which are reasonably expected to form the same mixture for the same purpose. It would have been prima facie obvious to add these to the pulp as close together as possible so that the can act the pulp together. Lacking evidence of unexpected results when using a time under 5 minutes compared to the disclosed 10 minutes (specification, page 4), it would have been prima facie obvious to select the proper point of addition using routine experimentation. The enzyme and polymer would be expected to act on the pulp whenever they are added for the functions taught by SARKAR '497 and/or '914. One of skill in the art would not expect any difference in results based on the order or timing of addition of these two ingredients. The argument that the runs of SAKAR '497 show that as the times increase the pulp properties increase as indicated by higher CSF values is not convincing as Applicant has not shown the instant pulp to have properties as good or better than that of the applied art. Applicant has disclosed introducing the polymer and enzyme within 10 minutes of each other. Although Applicant states that within 5 minutes is preferred, there is no evidence to show that the pulp properties improve using the shorter time between introductions.

It would be obvious to the artisan to use shorter times between additions to shorten the total time of the process. Appellant has not argued that the multiple point introductions taught by SARKAR '914 would not be within the claimed 5 minutes. Independent claim 31 does **not** claim any time limitation. Appellant's arguments that the Examples of Table 1 (Runs 30, 3 and 26) use different parameters is not convincing as the claims are not limited to any pH's or temperatures.

The argument that the polymers are not nitrogen containing or do not have a molecular weight of at least 10,000 is not convincing as many of the polymers of SARKAR '947 and/or '914 are the same as those disclosed by Applicant and would have the same molecular weight, see SARKAR '914, column 3, lines 5-10, claims 3 and 5. Many of the polymers disclosed by SARKAR '914 are nitrogen containing. It would have been obvious to substitute the polymers of SARKAR '914 for those of SARKAR '947. No unexpected results have been shown for combining the polymer and enzyme together. Both the enzyme and polymer would react with the pulp in the manner taught by SARKAR '497 and/or '914 whether they were added together or separately. It is noted that the term "simultaneously" would be the same as "added at the same time" which Appellant has defined as "within 10 minutes", see instant specification, page 4, lines 3-8.

The argument with respect to the addition of starch is not convincing as no criticality has been shown as to when the starch is added. The use of starch to increase the strength of paper is well known in the art. As set forth above all the ingredients would have been expected to form the same final mixture, irrespective as to the order of addition. In evaluating the reference, it is proper to take into account not only the specific teachings of the reference but also the inferences

which one skilled in the art would reasonably be expected to draw therefrom. See In re Prada, 401 F.2d 825,826, 159 USPQ 342, 344 (CCPA 1968).

The arguments that claim 31 claims introducing the polymer before the enzyme is not convincing as the claim does not claim that the steps occur sequentially. The claim reads either component being introduced before the other.

Appellants do not present any specific arguments as to how the limitations set forth in the dependent claims within each of the Groups are separately patentable over the cited prior art. Appellant merely recites the language of each dependent claim and states the art does not teach or suggest the combination for each dependent claim. In the absence of substantive arguments explaining why the specific limitations in the rejected claims render the claims separately patentable over the applied art, the rejections of these dependent claims should be affirmed. See 37 CFR § 1.192 (c)(6)(iv)(1993).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Steve Alvo
Primary Examiner
Art Unit 1731

msa
April 17, 2004

Conferees
Patrick Ryan
Steve Griffin